. // Model C.PP.1

.

. // poisson model

. glm dv `pp\_vars' `covariates' ib(freq).state ib(freq).time, family(poisson) link(log) vce(cl mineid) exposure(hours) iter(50) eform

Iteration 0: log pseudolikelihood = -53339.954

Iteration 1: log pseudolikelihood = -49213.11

Iteration 2: log pseudolikelihood = -49182.931

Iteration 3: log pseudolikelihood = -49182.464

Iteration 4: log pseudolikelihood = -49182.371

Iteration 5: log pseudolikelihood = -49182.348

Iteration 6: log pseudolikelihood = -49182.342

Iteration 7: log pseudolikelihood = -49182.341

Iteration 8: log pseudolikelihood = -49182.34

Iteration 9: log pseudolikelihood = -49182.34

Generalized linear models No. of obs = 28,337

Optimization : ML Residual df = 28,171

Scale parameter = 1

Deviance = 50724.27594 (1/df) Deviance = 1.800585

Pearson = 1131548.903 (1/df) Pearson = 40.16715

Variance function: V(u) = u [Poisson]

Link function : g(u) = ln(u) [Log]

AIC = 3.482962

Log pseudolikelihood = -49182.34044 BIC = -238082.7

(Std. Err. adjusted for 1,544 clusters in mineid)

-----------------------------------------------------------------------------------

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp48\_11\_pp | .9999106 .0006779 -0.13 0.895 .9985828 1.00124

sp48\_24\_pp | .9992751 .00014 -5.18 0.000 .9990008 .9995494

sp48\_25\_pp | .9997791 .0011564 -0.19 0.849 .9975151 1.002048

sp48\_26\_pp | 1.001014 .001074 0.94 0.345 .9989109 1.003121

sp48\_27\_pp | 1.000343 .0007474 0.46 0.647 .9988788 1.001808

sp48\_28\_pp | .9981776 .0010311 -1.77 0.077 .9961587 1.000201

sp48\_4\_pp | .9947699 .0008315 -6.27 0.000 .9931416 .9964009

sp48\_5\_pp | 1.000941 .0019491 0.48 0.629 .9971285 1.004769

sp48\_6\_pp | 1.000958 .0007578 1.27 0.206 .9994742 1.002445

sp48\_7\_pp | 1.000401 .0004716 0.85 0.395 .9994775 1.001326

sp48\_8\_pp | 1.000765 .0010229 0.75 0.454 .9987622 1.002772

sp75\_100\_pp | 1.003963 .0022595 1.76 0.079 .9995443 1.008401

sp75\_1002\_pp | 1.00014 .0003593 0.39 0.696 .9994363 1.000845

sp75\_1003\_pp | .9988922 .00036 -3.08 0.002 .9981868 .999598

sp75\_1003\_2\_pp | .999295 .000435 -1.62 0.105 .9984428 1.000148

sp75\_1311\_pp | .9999045 .0013719 -0.07 0.945 .9972192 1.002597

sp75\_1315\_pp | 1.020264 .0090679 2.26 0.024 1.002645 1.038193

sp75\_1316\_pp | 1.000831 .0012645 0.66 0.511 .9983553 1.003312

sp75\_1318\_pp | 1.047555 .0020376 23.89 0.000 1.043569 1.051557

sp75\_1400\_pp | .9983778 .0008202 -1.98 0.048 .9967714 .9999867

sp75\_1400\_1\_pp | .9988244 .0043597 -0.27 0.788 .9903161 1.007406

sp75\_1403\_10\_pp | 1.000918 .0001956 4.70 0.000 1.000535 1.001301

sp75\_1403\_5\_pp | .9992461 .0001982 -3.80 0.000 .9988578 .9996346

sp75\_1403\_6\_pp | .9999612 .0001345 -0.29 0.773 .9996976 1.000225

sp75\_1403\_7\_pp | 1.000569 .0004316 1.32 0.187 .9997239 1.001416

sp75\_1403\_8\_pp | .9992688 .0001926 -3.80 0.000 .9988914 .9996463

sp75\_1404\_pp | 1.00205 .0030698 0.67 0.504 .9960515 1.008085

sp75\_1404\_1\_pp | 1.000843 .0013071 0.65 0.519 .9982848 1.003409

sp75\_1405\_pp | .9997613 .0002749 -0.87 0.385 .9992225 1.0003

sp75\_1405\_1\_pp | .9989395 .0018499 -0.57 0.567 .9953204 1.002572

sp75\_153\_pp | 1.001134 .001322 0.86 0.391 .9985461 1.003728

sp75\_156\_pp | 1.000822 .0010263 0.80 0.423 .9988122 1.002835

sp75\_160\_pp | 1.010084 .0040008 2.53 0.011 1.002273 1.017956

sp75\_1719\_2\_pp | .9992468 .0015034 -0.50 0.617 .9963045 1.002198

sp75\_1719\_4\_pp | 1.000285 .0004197 0.68 0.497 .9994626 1.001108

sp75\_1720\_pp | 1.000612 .0004173 1.47 0.142 .9997945 1.00143

sp75\_1725\_pp | 1.000056 .0000712 0.79 0.431 .9999165 1.000196

sp75\_1906\_pp | 1.000806 .0006471 1.25 0.213 .9995387 1.002075

sp75\_1916\_pp | 1.000805 .0005399 1.49 0.136 .9997473 1.001864

sp75\_203\_pp | 1.000428 .0001843 2.32 0.020 1.000067 1.000789

sp75\_204\_pp | 1.000329 .0002639 1.25 0.213 .9998116 1.000846

sp75\_205\_pp | 1.003561 .0034015 1.05 0.294 .9969164 1.01025

sp75\_207\_pp | 1.001933 .0024222 0.80 0.425 .9971963 1.006691

sp75\_208\_pp | 1.000283 .0002395 1.18 0.238 .9998134 1.000752

sp75\_209\_pp | .9986027 .0011568 -1.21 0.227 .9963379 1.000873

sp75\_212\_pp | 1.0027 .0008946 3.02 0.003 1.000948 1.004455

sp75\_213\_pp | 1.002152 .0015006 1.44 0.151 .9992149 1.005097

sp75\_215\_pp | 1.000415 .0044285 0.09 0.925 .9917734 1.009133

sp75\_332\_pp | .9995871 .0017151 -0.24 0.810 .9962313 1.002954

sp75\_334\_pp | .9999687 .0005973 -0.05 0.958 .9987987 1.00114

sp75\_337\_pp | .9996175 .0004612 -0.83 0.407 .9987139 1.000522

sp75\_340\_pp | .9999692 .0001741 -0.18 0.860 .9996281 1.000311

sp75\_343\_pp | 1.00015 .000894 0.17 0.866 .9983997 1.001904

sp75\_373\_pp | .7654364 .0181327 -11.28 0.000 .7307094 .8018138

sp75\_388\_pp | .9998311 .0010653 -0.16 0.874 .9977453 1.001921

sp75\_389\_pp | .9993167 .0016026 -0.43 0.670 .9961806 1.002463

sp75\_500\_pp | 1.000058 .0008363 0.07 0.944 .9984208 1.001699

sp75\_500\_1\_pp | .9969191 .0037964 -0.81 0.418 .9895061 1.004388

sp75\_501\_pp | .9996564 .0014633 -0.23 0.814 .9967926 1.002528

sp75\_501\_2\_pp | .9971538 .0018888 -1.50 0.132 .9934586 1.000863

sp75\_502\_pp | 1.005857 .0017331 3.39 0.001 1.002466 1.00926

sp75\_503\_pp | 1.00006 .0000531 1.13 0.260 .9999557 1.000164

sp75\_505\_pp | .9970181 .0026817 -1.11 0.267 .9917759 1.002288

sp75\_506\_1\_pp | 1.001448 .0009024 1.61 0.108 .9996805 1.003218

sp75\_507\_pp | .9999603 .0006209 -0.06 0.949 .998744 1.001178

sp75\_507\_1\_pp | 1.000503 .0003375 1.49 0.136 .9998418 1.001165

sp75\_508\_1\_pp | .996229 .0011394 -3.30 0.001 .9939982 .9984648

sp75\_509\_pp | 1.001848 .0014356 1.29 0.197 .9990386 1.004666

sp75\_510\_pp | .9994325 .0029544 -0.19 0.848 .9936587 1.00524

sp75\_512\_1\_pp | 1.001625 .0057006 0.29 0.775 .9905141 1.01286

sp75\_523\_pp | .9994944 .000545 -0.93 0.354 .9984268 1.000563

sp75\_523\_3\_pp | .9994587 .0001486 -3.64 0.000 .9991674 .99975

sp75\_524\_pp | 1.001042 .0022798 0.46 0.647 .9965839 1.00552

sp75\_602\_pp | 1.000678 .0004754 1.43 0.154 .9997464 1.00161

sp75\_603\_pp | 1.001108 .0005512 2.01 0.044 1.000029 1.002189

sp75\_604\_pp | 1.000079 .0000859 0.92 0.355 .999911 1.000248

sp75\_605\_pp | .9997966 .0002333 -0.87 0.383 .9993394 1.000254

sp75\_606\_pp | 1.000213 .0002048 1.04 0.297 .9998122 1.000615

sp75\_607\_pp | .9994348 .0007371 -0.77 0.443 .9979911 1.000881

sp75\_703\_3\_pp | .999722 .000769 -0.36 0.718 .998216 1.00123

sp75\_703\_4\_pp | .7154071 .0133792 -17.91 0.000 .6896591 .7421164

sp75\_807\_pp | 1.000225 .0001647 1.37 0.171 .9999027 1.000548

sp75\_810\_pp | 1.001821 .0007609 2.40 0.017 1.000331 1.003313

sp75\_811\_pp | .9994249 .0007282 -0.79 0.430 .9979987 1.000853

sp75\_812\_pp | .9994089 .0014153 -0.42 0.676 .9966388 1.002187

sp75\_816\_pp | .999484 .0004087 -1.26 0.207 .9986832 1.000285

sp75\_817\_pp | .9984244 .0030012 -0.52 0.600 .9925594 1.004324

sp75\_906\_pp | .9977367 .0023926 -0.94 0.345 .9930583 1.002437

mine\_time | 1.001527 .0014166 1.08 0.281 .9987546 1.004308

onsite\_insp\_hours | .9995076 .0001343 -3.67 0.000 .9992444 .9997708

|

state |

AL | .9764935 .0842341 -0.28 0.783 .8245997 1.156367

AR | 1.735936 .0825708 11.60 0.000 1.581414 1.905555

CO | .6737724 .0705093 -3.77 0.000 .5488279 .8271614

IL | 1.232871 .0922877 2.80 0.005 1.064633 1.427694

IN | 1.094384 .1307202 0.76 0.450 .8659581 1.383065

MD | 1.133963 .1373875 1.04 0.299 .8942724 1.437897

MT | .5096141 .022883 -15.01 0.000 .4666811 .5564968

NM | .7036099 .0289176 -8.55 0.000 .6491552 .7626326

OH | 1.009446 .0805756 0.12 0.906 .8632542 1.180395

OK | 1.779196 .3400454 3.01 0.003 1.223319 2.587665

PA | 1.042006 .1019454 0.42 0.674 .8601857 1.262258

TN | 1.577719 .1467403 4.90 0.000 1.314805 1.893207

UT | .453287 .0684709 -5.24 0.000 .3371287 .6094678

VA | .8614375 .0635914 -2.02 0.043 .7453975 .995542

WV | 1.086968 .0528281 1.72 0.086 .9882052 1.195601

WY | .7186831 .0349351 -6.80 0.000 .6533721 .7905226

|

time |

2000 | .9838556 .0551146 -0.29 0.771 .881552 1.098031

2000.25 | 1.106772 .0615653 1.82 0.068 .9924514 1.234261

2000.5 | 1.273332 .0638915 4.82 0.000 1.154068 1.404921

2000.75 | .9289885 .0466573 -1.47 0.142 .8418985 1.025087

2001 | .9167515 .040292 -1.98 0.048 .8410864 .9992236

2001.5 | 1.195348 .0610899 3.49 0.000 1.081416 1.321284

2001.75 | .9364166 .0531565 -1.16 0.247 .8378184 1.046618

2002 | .9669192 .0518674 -0.63 0.531 .8704224 1.074114

2002.25 | .9531572 .0528052 -0.87 0.387 .8550819 1.062482

2002.5 | 1.049047 .0659885 0.76 0.447 .9273669 1.186693

2002.75 | .9308766 .0539365 -1.24 0.216 .8309446 1.042827

2003 | .8145924 .0476924 -3.50 0.000 .7262808 .9136421

2003.25 | .8762285 .0509848 -2.27 0.023 .7817877 .9820778

2003.5 | .9895826 .0560913 -0.18 0.853 .8855324 1.105859

2003.75 | .7564582 .0404098 -5.22 0.000 .6812616 .8399548

2004 | .7702904 .0458163 -4.39 0.000 .6855286 .8655324

2004.25 | .831523 .0473967 -3.24 0.001 .7436282 .9298067

2004.5 | .9203035 .051433 -1.49 0.137 .8248215 1.026839

2004.75 | .7359406 .0439601 -5.13 0.000 .6546328 .8273472

2005 | .7071658 .0416237 -5.89 0.000 .6301146 .7936388

2005.25 | .7921381 .0466666 -3.96 0.000 .7057563 .8890928

2005.5 | .8554494 .0518087 -2.58 0.010 .7597012 .963265

2005.75 | .7256989 .0456544 -5.10 0.000 .6415147 .8209305

2006 | .7390743 .0474833 -4.71 0.000 .6516299 .8382531

2006.25 | .6983822 .0441765 -5.68 0.000 .61695 .7905628

2006.5 | .85661 .0613471 -2.16 0.031 .7444292 .9856958

2006.75 | .6713698 .04616 -5.80 0.000 .5867289 .7682209

2007 | .6883478 .0473186 -5.43 0.000 .6015814 .7876284

2007.25 | .7028395 .0567029 -4.37 0.000 .6000451 .8232438

2007.5 | .8191186 .0567626 -2.88 0.004 .7150903 .9382804

2007.75 | .6884223 .0506408 -5.08 0.000 .5959914 .795188

2008 | .6487401 .0441771 -6.35 0.000 .567684 .7413696

2008.25 | .6345189 .045089 -6.40 0.000 .5520242 .7293417

2008.5 | .75011 .0574633 -3.75 0.000 .6455314 .8716307

2008.75 | .5867894 .0438933 -7.13 0.000 .5067693 .6794449

2009 | .6088698 .0425193 -7.10 0.000 .5309852 .6981785

2009.25 | .5641457 .0433759 -7.45 0.000 .4852262 .655901

2009.5 | .6352033 .048592 -5.93 0.000 .5467606 .7379523

2009.75 | .5506452 .0405365 -8.11 0.000 .4766608 .636113

2010 | .5724734 .0540965 -5.90 0.000 .4756857 .6889546

2010.25 | .5607484 .0488498 -6.64 0.000 .4727323 .6651519

2010.5 | .6557949 .0448654 -6.17 0.000 .5735009 .7498976

2010.75 | .5406039 .0414089 -8.03 0.000 .4652423 .6281728

2011 | .5290466 .0390606 -8.62 0.000 .4577706 .6114204

2011.25 | .5084556 .0375154 -9.17 0.000 .439996 .5875669

2011.5 | .5968459 .0418031 -7.37 0.000 .5202882 .6846686

2011.75 | .4542807 .0332094 -10.79 0.000 .3936395 .5242639

2012 | .4982272 .0367095 -9.46 0.000 .4312317 .575631

2012.25 | .4419098 .032955 -10.95 0.000 .3818177 .5114595

2012.5 | .4983955 .0406984 -8.53 0.000 .424684 .5849009

2012.75 | .403301 .0332365 -11.02 0.000 .3431475 .4739994

2013 | .4476991 .0363575 -9.90 0.000 .3818215 .5249428

2013.25 | .4347824 .0383637 -9.44 0.000 .3657337 .5168672

2013.5 | .5001691 .0442547 -7.83 0.000 .4205358 .5948818

2013.75 | .393511 .0349574 -10.50 0.000 .3306288 .4683526

2014 | .4374213 .0407991 -8.87 0.000 .3643399 .5251617

2014.25 | .4580503 .0452042 -7.91 0.000 .3774935 .5557977

2014.5 | .4903659 .0432038 -8.09 0.000 .412596 .5827947

2014.75 | .4608048 .0423978 -8.42 0.000 .3847686 .551867

2015 | .4258185 .0404525 -8.99 0.000 .3534768 .5129655

2015.25 | .3967017 .0359157 -10.21 0.000 .3322002 .473727

2015.5 | .5215384 .0487541 -6.96 0.000 .434225 .6264086

2015.75 | .40493 .0435501 -8.41 0.000 .3279695 .4999499

2016 | .4485568 .0472313 -7.61 0.000 .3649128 .5513733

|

\_cons | .0000898 4.72e-06 -177.07 0.000 .000081 .0000995

ln(hours) | 1 (exposure)

-----------------------------------------------------------------------------------

.

. quietly poisson dv `pp\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

. est store pois

. estat gof

Deviance goodness-of-fit = 50724.28

Prob > chi2(28171) = 0.0000

Pearson goodness-of-fit = 1131497

Prob > chi2(28171) = 0.0000

.

. pause "next"

.

. // negative binomial model

. glm dv `pp\_vars' `covariates' ib(freq).state ib(freq).time, family(nbinomial) link(log) vce(cl mineid) exposure(hours) iter(50) eform

Iteration 0: log pseudolikelihood = -47682.341

Iteration 1: log pseudolikelihood = -47079.943

Iteration 2: log pseudolikelihood = -47075.07

Iteration 3: log pseudolikelihood = -47074.81

Iteration 4: log pseudolikelihood = -47074.751

Iteration 5: log pseudolikelihood = -47074.738

Iteration 6: log pseudolikelihood = -47074.735

Iteration 7: log pseudolikelihood = -47074.734

Iteration 8: log pseudolikelihood = -47074.734

Iteration 9: log pseudolikelihood = -47074.734

Generalized linear models No. of obs = 28,337

Optimization : ML Residual df = 28,170

Scale parameter = 1

Deviance = 22274.89839 (1/df) Deviance = .7907312

Pearson = 751687.8 (1/df) Pearson = 26.68398

Variance function: V(u) = u+(1)u^2 [Neg. Binomial]

Link function : g(u) = ln(u) [Log]

AIC = 3.334279

Log pseudolikelihood = -47074.73364 BIC = -266521.8

(Std. Err. adjusted for 1,544 clusters in mineid)

-----------------------------------------------------------------------------------

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp48\_11\_pp | 1.001197 .0007997 1.50 0.134 .9996305 1.002765

sp48\_24\_pp | .9989609 .0001713 -6.06 0.000 .9986251 .9992967

sp48\_25\_pp | .9995373 .0011054 -0.42 0.676 .9973731 1.001706

sp48\_26\_pp | 1.001139 .0012155 0.94 0.348 .9987595 1.003524

sp48\_27\_pp | .9995954 .0009298 -0.44 0.663 .9977746 1.001419

sp48\_28\_pp | .9986007 .0016992 -0.82 0.411 .995276 1.001937

sp48\_4\_pp | .9931008 .0009709 -7.08 0.000 .9911996 .9950056

sp48\_5\_pp | 1.003166 .0019049 1.66 0.096 .999439 1.006906

sp48\_6\_pp | 1.001005 .0009029 1.11 0.266 .9992365 1.002776

sp48\_7\_pp | 1.001217 .0007304 1.67 0.095 .9997865 1.00265

sp48\_8\_pp | 1.001826 .0012579 1.45 0.146 .9993635 1.004294

sp75\_100\_pp | 1.005639 .0026372 2.14 0.032 1.000483 1.010821

sp75\_1002\_pp | .9992478 .0003853 -1.95 0.051 .998493 1.000003

sp75\_1003\_pp | .9986289 .0004574 -3.00 0.003 .9977328 .9995257

sp75\_1003\_2\_pp | .9988776 .0004337 -2.59 0.010 .9980279 .9997279

sp75\_1311\_pp | .9998281 .0015651 -0.11 0.913 .9967653 1.0029

sp75\_1315\_pp | 1.011341 .0108285 1.05 0.292 .9903386 1.032789

sp75\_1316\_pp | .9993364 .0026275 -0.25 0.801 .9941998 1.0045

sp75\_1318\_pp | 1.047951 .0022729 21.60 0.000 1.043506 1.052416

sp75\_1400\_pp | .9986601 .000916 -1.46 0.144 .9968665 1.000457

sp75\_1400\_1\_pp | .9961624 .0043083 -0.89 0.374 .9877539 1.004642

sp75\_1403\_10\_pp | 1.000871 .0002429 3.59 0.000 1.000395 1.001347

sp75\_1403\_5\_pp | .9993139 .0002184 -3.14 0.002 .9988859 .9997422

sp75\_1403\_6\_pp | .999932 .0001663 -0.41 0.683 .9996061 1.000258

sp75\_1403\_7\_pp | .9997639 .0006256 -0.38 0.706 .9985385 1.000991

sp75\_1403\_8\_pp | .9992865 .0001813 -3.93 0.000 .9989311 .9996419

sp75\_1404\_pp | 1.002762 .0046745 0.59 0.554 .9936418 1.011966

sp75\_1404\_1\_pp | .9979035 .0023556 -0.89 0.374 .9932973 1.002531

sp75\_1405\_pp | .9996367 .0003082 -1.18 0.239 .9990327 1.000241

sp75\_1405\_1\_pp | 1.004508 .0070703 0.64 0.523 .9907459 1.018462

sp75\_153\_pp | 1.001301 .0034902 0.37 0.709 .9944833 1.008165

sp75\_156\_pp | .9988882 .0018083 -0.61 0.539 .9953503 1.002439

sp75\_160\_pp | 1.013935 .0069092 2.03 0.042 1.000484 1.027568

sp75\_1719\_2\_pp | .9988854 .0020884 -0.53 0.594 .9948005 1.002987

sp75\_1719\_4\_pp | .9999381 .000504 -0.12 0.902 .9989508 1.000926

sp75\_1720\_pp | 1.00092 .0005105 1.80 0.071 .9999197 1.001921

sp75\_1725\_pp | 1.000241 .0000966 2.50 0.013 1.000052 1.00043

sp75\_1906\_pp | 1.001393 .0007171 1.94 0.052 .9999888 1.0028

sp75\_1916\_pp | 1.001412 .0008787 1.61 0.108 .9996911 1.003135

sp75\_203\_pp | 1.000179 .0002175 0.82 0.410 .999753 1.000606

sp75\_204\_pp | 1.000395 .0003007 1.31 0.189 .9998055 1.000984

sp75\_205\_pp | 1.004512 .0033084 1.37 0.172 .998049 1.011018

sp75\_207\_pp | 1.008581 .0122347 0.70 0.481 .9848844 1.032848

sp75\_208\_pp | 1.000631 .0003062 2.06 0.039 1.000031 1.001232

sp75\_209\_pp | .9988149 .0011524 -1.03 0.304 .9965588 1.001076

sp75\_212\_pp | 1.003121 .0008445 3.70 0.000 1.001467 1.004778

sp75\_213\_pp | 1.001286 .0015763 0.82 0.414 .9982011 1.00438

sp75\_215\_pp | .9950718 .0064304 -0.76 0.445 .9825479 1.007755

sp75\_332\_pp | 1.00042 .0016047 0.26 0.793 .9972801 1.00357

sp75\_334\_pp | 1.00013 .0006503 0.20 0.842 .9988563 1.001405

sp75\_337\_pp | .9997329 .0004047 -0.66 0.509 .99894 1.000526

sp75\_340\_pp | .9998932 .0002061 -0.52 0.604 .9994893 1.000297

sp75\_343\_pp | 1.000079 .0008492 0.09 0.926 .9984163 1.001745

sp75\_373\_pp | .7629576 .017942 -11.50 0.000 .72859 .7989464

sp75\_388\_pp | 1.000913 .0013111 0.70 0.486 .9983467 1.003486

sp75\_389\_pp | .9982221 .0024569 -0.72 0.470 .9934183 1.003049

sp75\_500\_pp | .9998835 .0008124 -0.14 0.886 .9982926 1.001477

sp75\_500\_1\_pp | .9969858 .0028772 -1.05 0.296 .9913625 1.002641

sp75\_501\_pp | .9991199 .0018229 -0.48 0.629 .9955535 1.002699

sp75\_501\_2\_pp | .9977959 .0018911 -1.16 0.244 .9940963 1.001509

sp75\_502\_pp | 1.00267 .001757 1.52 0.128 .999232 1.006119

sp75\_503\_pp | 1.000058 .0000701 0.82 0.412 .9999202 1.000195

sp75\_505\_pp | .999335 .0018469 -0.36 0.719 .9957217 1.002961

sp75\_506\_1\_pp | 1.00171 .0012379 1.38 0.167 .9992866 1.004139

sp75\_507\_pp | .99956 .0007492 -0.59 0.557 .9980926 1.00103

sp75\_507\_1\_pp | 1.000657 .000394 1.67 0.095 .9998849 1.001429

sp75\_508\_1\_pp | .9935213 .0013717 -4.71 0.000 .9908365 .9962133

sp75\_509\_pp | 1.002771 .001906 1.46 0.145 .9990424 1.006514

sp75\_510\_pp | .9973528 .0031668 -0.83 0.404 .9911653 1.003579

sp75\_512\_1\_pp | .9969377 .0043901 -0.70 0.486 .9883702 1.005579

sp75\_523\_pp | .9993908 .00064 -0.95 0.341 .9981371 1.000646

sp75\_523\_3\_pp | .9996664 .0001744 -1.91 0.056 .9993246 1.000008

sp75\_524\_pp | 1.00004 .002256 0.02 0.986 .9956283 1.004472

sp75\_602\_pp | 1.001005 .001061 0.95 0.343 .9989273 1.003086

sp75\_603\_pp | 1.001334 .0008136 1.64 0.101 .9997411 1.00293

sp75\_604\_pp | 1.000182 .0000962 1.90 0.058 .9999938 1.000371

sp75\_605\_pp | 1.000109 .0002916 0.37 0.710 .9995373 1.00068

sp75\_606\_pp | 1.000184 .0001825 1.01 0.313 .9998264 1.000542

sp75\_607\_pp | .9989637 .0008227 -1.26 0.208 .9973526 1.000577

sp75\_703\_3\_pp | .9992919 .0008863 -0.80 0.424 .9975563 1.00103

sp75\_703\_4\_pp | .7116017 .0134711 -17.97 0.000 .6856827 .7385004

sp75\_807\_pp | 1.000303 .0002171 1.39 0.163 .9998772 1.000728

sp75\_810\_pp | 1.00261 .0010845 2.41 0.016 1.000487 1.004738

sp75\_811\_pp | .9991755 .000657 -1.25 0.210 .9978885 1.000464

sp75\_812\_pp | .9992422 .0027528 -0.28 0.783 .9938614 1.004652

sp75\_816\_pp | .9990412 .0005124 -1.87 0.061 .9980374 1.000046

sp75\_817\_pp | 1.000351 .0042831 0.08 0.935 .9919909 1.008781

sp75\_906\_pp | .9970251 .002628 -1.13 0.258 .9918876 1.002189

mine\_time | 1.002078 .0013244 1.57 0.116 .9994855 1.004677

onsite\_insp\_hours | .9994693 .0001296 -4.09 0.000 .9992153 .9997234

|

state |

AL | 1.058243 .1136026 0.53 0.598 .8574495 1.306056

AR | 1.62818 .0725399 10.94 0.000 1.492036 1.776748

CO | .8257647 .1073958 -1.47 0.141 .6399591 1.065517

IL | 1.304814 .0781417 4.44 0.000 1.160306 1.46732

IN | 1.084859 .0924717 0.96 0.339 .9179479 1.282119

MD | 1.316676 .2395709 1.51 0.131 .9217253 1.880858

MT | .550869 .02275 -14.44 0.000 .5080367 .5973125

NM | .7660165 .0301196 -6.78 0.000 .7092005 .8273841

OH | 1.039207 .0906319 0.44 0.659 .8759246 1.232928

OK | 1.895677 .3332171 3.64 0.000 1.343205 2.675385

PA | 1.357303 .0972029 4.27 0.000 1.179555 1.561836

TN | 1.774769 .1684647 6.04 0.000 1.473479 2.137665

UT | .5313489 .095317 -3.52 0.000 .3738397 .755221

VA | .9535054 .0476132 -0.95 0.340 .8646065 1.051545

WV | 1.308584 .0594717 5.92 0.000 1.197062 1.430495

WY | .8126236 .0466337 -3.62 0.000 .7261759 .9093623

|

time |

2000 | .8976069 .0820087 -1.18 0.237 .7504421 1.073631

2000.25 | 1.064074 .0970423 0.68 0.496 .8899036 1.272332

2000.5 | 1.177104 .1028053 1.87 0.062 .9919123 1.396872

2000.75 | .7834421 .0689655 -2.77 0.006 .6592902 .9309732

2001 | .7963445 .0663765 -2.73 0.006 .6763198 .9376697

2001.5 | 1.07329 .0769772 0.99 0.324 .932542 1.235282

2001.75 | .857725 .0637525 -2.06 0.039 .7414476 .9922375

2002 | .9659668 .1124945 -0.30 0.766 .7688348 1.213644

2002.25 | .9043822 .0706074 -1.29 0.198 .7760622 1.05392

2002.5 | .9743169 .0724565 -0.35 0.726 .8421693 1.1272

2002.75 | .7688703 .0709577 -2.85 0.004 .6416486 .9213167

2003 | .7580888 .073972 -2.84 0.005 .626127 .9178626

2003.25 | .8345286 .0898597 -1.68 0.093 .6757502 1.030614

2003.5 | .9334292 .0879951 -0.73 0.465 .7759576 1.122858

2003.75 | .6483147 .0596021 -4.71 0.000 .5414167 .7763188

2004 | .6958146 .0668045 -3.78 0.000 .5764617 .8398786

2004.25 | .7381838 .0710112 -3.16 0.002 .6113379 .8913489

2004.5 | .7886882 .0720935 -2.60 0.009 .6593219 .9434376

2004.75 | .6281551 .0537968 -5.43 0.000 .5310896 .7429609

2005 | .6422066 .0601091 -4.73 0.000 .5345695 .7715168

2005.25 | .6843143 .0633435 -4.10 0.000 .5707739 .8204404

2005.5 | .733966 .0655873 -3.46 0.001 .6160449 .874459

2005.75 | .6017141 .0586203 -5.21 0.000 .4971235 .7283096

2006 | .6872454 .0696972 -3.70 0.000 .5633613 .8383719

2006.25 | .6414817 .0631266 -4.51 0.000 .5289562 .777945

2006.5 | .7300473 .0708863 -3.24 0.001 .6035327 .8830824

2006.75 | .6044393 .0608261 -5.00 0.000 .4962429 .7362259

2007 | .5788434 .0575975 -5.49 0.000 .4762804 .7034924

2007.25 | .6048118 .0619978 -4.91 0.000 .4947271 .7393921

2007.5 | .7206224 .080462 -2.93 0.003 .578983 .8969117

2007.75 | .5735678 .0607187 -5.25 0.000 .4660961 .7058203

2008 | .5537908 .0557752 -5.87 0.000 .4545868 .6746441

2008.25 | .5529875 .0583796 -5.61 0.000 .4496275 .6801077

2008.5 | .5854461 .0619373 -5.06 0.000 .4758105 .7203438

2008.75 | .4764379 .0500906 -7.05 0.000 .3877169 .5854609

2009 | .4949784 .0512577 -6.79 0.000 .4040544 .6063631

2009.25 | .5158307 .0571179 -5.98 0.000 .4151964 .6408564

2009.5 | .5542716 .0596659 -5.48 0.000 .4488415 .6844665

2009.75 | .4682214 .0498452 -7.13 0.000 .3800453 .5768556

2010 | .4730529 .0506662 -6.99 0.000 .3834793 .5835491

2010.25 | .4642322 .0504206 -7.07 0.000 .3752197 .5743608

2010.5 | .6029966 .062321 -4.89 0.000 .4924264 .7383943

2010.75 | .4738291 .0518597 -6.82 0.000 .3823485 .5871974

2011 | .4731238 .0505208 -7.01 0.000 .38378 .5832668

2011.25 | .4510181 .0474756 -7.56 0.000 .366939 .5543629

2011.5 | .5146605 .0524831 -6.51 0.000 .4214233 .6285259

2011.75 | .3999794 .0419665 -8.73 0.000 .3256329 .4913003

2012 | .4464512 .0487016 -7.39 0.000 .360512 .5528765

2012.25 | .3805348 .0405334 -9.07 0.000 .3088353 .46888

2012.5 | .4439232 .0510122 -7.07 0.000 .3544006 .5560595

2012.75 | .3371039 .0389081 -9.42 0.000 .2688556 .4226767

2013 | .3982696 .0463666 -7.91 0.000 .3170152 .5003503

2013.25 | .3699092 .04131 -8.91 0.000 .2971915 .4604197

2013.5 | .4368764 .0496561 -7.29 0.000 .3496308 .545893

2013.75 | .3268064 .0375952 -9.72 0.000 .2608374 .4094598

2014 | .3671984 .0417392 -8.81 0.000 .2938632 .4588347

2014.25 | .3821423 .0448615 -8.19 0.000 .3035977 .4810073

2014.5 | .3937886 .0459312 -7.99 0.000 .313314 .4949332

2014.75 | .4049444 .0476268 -7.69 0.000 .3215755 .5099269

2015 | .3565562 .041517 -8.86 0.000 .2838018 .4479617

2015.25 | .3378143 .038586 -9.50 0.000 .2700546 .4225756

2015.5 | .4349256 .0505104 -7.17 0.000 .3463858 .5460971

2015.75 | .355996 .0441098 -8.34 0.000 .2792394 .4538513

2016 | .3700919 .0474745 -7.75 0.000 .287819 .4758825

|

\_cons | .0000943 7.51e-06 -116.50 0.000 .0000807 .0001103

ln(hours) | 1 (exposure)

-----------------------------------------------------------------------------------

.

. pause "next"

.

. eststo clear

. eststo: nbreg dv `pp\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

Fitting Poisson model:

Iteration 0: log pseudolikelihood = -265942.38

Iteration 1: log pseudolikelihood = -195299.88

Iteration 2: log pseudolikelihood = -86611.017

Iteration 3: log pseudolikelihood = -53530.15

Iteration 4: log pseudolikelihood = -50212.539

Iteration 5: log pseudolikelihood = -49308.598

Iteration 6: log pseudolikelihood = -49191.956

Iteration 7: log pseudolikelihood = -49182.47

Iteration 8: log pseudolikelihood = -49182.341

Iteration 9: log pseudolikelihood = -49182.34

Iteration 10: log pseudolikelihood = -49182.34

Fitting constant-only model:

Iteration 0: log pseudolikelihood = -48337.833

Iteration 1: log pseudolikelihood = -47621.385

Iteration 2: log pseudolikelihood = -47591.372

Iteration 3: log pseudolikelihood = -47591.309

Iteration 4: log pseudolikelihood = -47591.309

Fitting full model:

Iteration 0: log pseudolikelihood = -46126.294

Iteration 1: log pseudolikelihood = -45879.166

Iteration 2: log pseudolikelihood = -45873.528

Iteration 3: log pseudolikelihood = -45873.525

Negative binomial regression Number of obs = 28,337

Wald chi2(164) = .

Dispersion = mean Prob > chi2 = .

Log pseudolikelihood = -45873.525 Pseudo R2 = 0.0361

(Std. Err. adjusted for 1,544 clusters in mineid)

-----------------------------------------------------------------------------------

| Robust

dv | IRR Std. Err. z P>|z| [95% Conf. Interval]

------------------+----------------------------------------------------------------

sp48\_11\_pp | 1.000916 .0007059 1.30 0.194 .999533 1.0023

sp48\_24\_pp | .9990858 .0001504 -6.08 0.000 .9987912 .9993806

sp48\_25\_pp | .9995451 .001024 -0.44 0.657 .9975402 1.001554

sp48\_26\_pp | 1.001256 .0011667 1.08 0.282 .9989717 1.003545

sp48\_27\_pp | .9997621 .0008227 -0.29 0.772 .9981508 1.001376

sp48\_28\_pp | .9984766 .0013929 -1.09 0.274 .9957503 1.00121

sp48\_4\_pp | .993559 .0008791 -7.30 0.000 .9918374 .9952836

sp48\_5\_pp | 1.002592 .0018285 1.42 0.156 .9990148 1.006183

sp48\_6\_pp | 1.001086 .0008568 1.27 0.205 .999408 1.002766

sp48\_7\_pp | 1.000875 .0006219 1.41 0.159 .9996573 1.002095

sp48\_8\_pp | 1.001522 .0011253 1.35 0.176 .9993191 1.00373

sp75\_100\_pp | 1.005105 .0024294 2.11 0.035 1.000355 1.009878

sp75\_1002\_pp | .9995436 .0003689 -1.24 0.216 .9988209 1.000267

sp75\_1003\_pp | .9987 .0004322 -3.01 0.003 .9978533 .9995474

sp75\_1003\_2\_pp | .9990115 .0004289 -2.30 0.021 .9981712 .9998525

sp75\_1311\_pp | 1.000073 .0015573 0.05 0.963 .9970255 1.00313

sp75\_1315\_pp | 1.014692 .0098759 1.50 0.134 .9955189 1.034234

sp75\_1316\_pp | 1.000185 .0020371 0.09 0.928 .9961999 1.004185

sp75\_1318\_pp | 1.048263 .002017 24.50 0.000 1.044317 1.052224

sp75\_1400\_pp | .9984639 .000849 -1.81 0.071 .9968013 1.000129

sp75\_1400\_1\_pp | .9968378 .0042552 -0.74 0.458 .9885326 1.005213

sp75\_1403\_10\_pp | 1.000803 .0002139 3.76 0.000 1.000384 1.001222

sp75\_1403\_5\_pp | .9993036 .0002137 -3.26 0.001 .9988847 .9997226

sp75\_1403\_6\_pp | .9999592 .0001558 -0.26 0.794 .9996539 1.000265

sp75\_1403\_7\_pp | 1.000066 .0005697 0.12 0.908 .9989496 1.001183

sp75\_1403\_8\_pp | .9992905 .0001683 -4.21 0.000 .9989607 .9996205

sp75\_1404\_pp | 1.002777 .0043817 0.63 0.526 .9942255 1.011402

sp75\_1404\_1\_pp | .998641 .0020326 -0.67 0.504 .9946652 1.002633

sp75\_1405\_pp | .9996772 .0003048 -1.06 0.290 .9990799 1.000275

sp75\_1405\_1\_pp | 1.002134 .005225 0.41 0.683 .9919453 1.012427

sp75\_153\_pp | 1.000787 .002531 0.31 0.756 .9958387 1.00576

sp75\_156\_pp | .9997577 .0013707 -0.18 0.860 .9970748 1.002448

sp75\_160\_pp | 1.012526 .0067436 1.87 0.062 .9993952 1.02583

sp75\_1719\_2\_pp | .999071 .0018665 -0.50 0.619 .9954194 1.002736

sp75\_1719\_4\_pp | 1.000111 .0004581 0.24 0.808 .9992139 1.00101

sp75\_1720\_pp | 1.000856 .0004797 1.78 0.074 .9999157 1.001796

sp75\_1725\_pp | 1.000184 .0000869 2.12 0.034 1.000014 1.000354

sp75\_1906\_pp | 1.001322 .0006747 1.96 0.050 1.000001 1.002646

sp75\_1916\_pp | 1.001314 .000776 1.70 0.090 .9997947 1.002836

sp75\_203\_pp | 1.000267 .0002015 1.32 0.186 .9998719 1.000662

sp75\_204\_pp | 1.000359 .0002788 1.29 0.197 .999813 1.000906

sp75\_205\_pp | 1.004781 .0034186 1.40 0.161 .9981027 1.011503

sp75\_207\_pp | 1.003816 .0050285 0.76 0.447 .9940085 1.01372

sp75\_208\_pp | 1.000491 .0002561 1.92 0.055 .999989 1.000993

sp75\_209\_pp | .9986953 .0010718 -1.22 0.224 .9965968 1.000798

sp75\_212\_pp | 1.002979 .0008311 3.59 0.000 1.001351 1.004609

sp75\_213\_pp | 1.001593 .0015415 1.03 0.301 .9985761 1.004619

sp75\_215\_pp | .9967136 .0062944 -0.52 0.602 .9844528 1.009127

sp75\_332\_pp | 1.000359 .0015771 0.23 0.820 .9972722 1.003454

sp75\_334\_pp | 1.000212 .0005962 0.36 0.722 .9990447 1.001382

sp75\_337\_pp | .9997269 .0003792 -0.72 0.471 .998984 1.00047

sp75\_340\_pp | .9998677 .0001929 -0.69 0.493 .9994897 1.000246

sp75\_343\_pp | 1.000136 .0008241 0.16 0.869 .998522 1.001752

sp75\_373\_pp | .6772731 .0165605 -15.94 0.000 .6455806 .7105215

sp75\_388\_pp | 1.000378 .0011321 0.33 0.738 .9981617 1.002599

sp75\_389\_pp | .9986268 .0020682 -0.66 0.507 .9945815 1.002689

sp75\_500\_pp | 1.000038 .0007855 0.05 0.962 .9984992 1.001578

sp75\_500\_1\_pp | .9971232 .0031738 -0.91 0.365 .9909221 1.003363

sp75\_501\_pp | .9992797 .0016877 -0.43 0.670 .9959774 1.002593

sp75\_501\_2\_pp | .9978678 .0018607 -1.14 0.252 .9942274 1.001521

sp75\_502\_pp | 1.003204 .0017654 1.82 0.069 .99975 1.00667

sp75\_503\_pp | 1.000071 .0000613 1.16 0.245 .9999511 1.000192

sp75\_505\_pp | .9990094 .0019504 -0.51 0.612 .9951939 1.002839

sp75\_506\_1\_pp | 1.001719 .0012013 1.43 0.152 .9993677 1.004077

sp75\_507\_pp | .9996314 .0006972 -0.53 0.597 .9982658 1.000999

sp75\_507\_1\_pp | 1.000556 .0003514 1.58 0.113 .9998679 1.001245

sp75\_508\_1\_pp | .9945155 .0011754 -4.65 0.000 .9922143 .996822

sp75\_509\_pp | 1.002224 .0015717 1.42 0.157 .9991485 1.005309

sp75\_510\_pp | .9978628 .0030002 -0.71 0.477 .9919999 1.00376

sp75\_512\_1\_pp | .9983482 .0045703 -0.36 0.718 .9894306 1.007346

sp75\_523\_pp | .9994182 .0005741 -1.01 0.311 .9982936 1.000544

sp75\_523\_3\_pp | .9995985 .0001617 -2.48 0.013 .9992816 .9999155

sp75\_524\_pp | 1.00042 .002251 0.19 0.852 .9960179 1.004842

sp75\_602\_pp | 1.000728 .0007684 0.95 0.344 .9992227 1.002235

sp75\_603\_pp | 1.001402 .0007476 1.88 0.061 .9999381 1.002869

sp75\_604\_pp | 1.000171 .0000891 1.91 0.056 .9999959 1.000345

sp75\_605\_pp | 1.000008 .0002579 0.03 0.974 .9995031 1.000514

sp75\_606\_pp | 1.000237 .0001806 1.31 0.190 .9998829 1.000591

sp75\_607\_pp | .9992012 .0007672 -1.04 0.298 .9976986 1.000706

sp75\_703\_3\_pp | .9995048 .0008234 -0.60 0.548 .9978923 1.00112

sp75\_703\_4\_pp | .6568867 .014001 -19.72 0.000 .6300105 .6849093

sp75\_807\_pp | 1.000302 .0002056 1.47 0.142 .999899 1.000705

sp75\_810\_pp | 1.002348 .00101 2.33 0.020 1.00037 1.004329

sp75\_811\_pp | .9992776 .0006512 -1.11 0.267 .998002 1.000555

sp75\_812\_pp | .9992408 .0022932 -0.33 0.741 .9947564 1.003745

sp75\_816\_pp | .9991667 .0004672 -1.78 0.075 .9982515 1.000083

sp75\_817\_pp | 1.000217 .004286 0.05 0.960 .9918514 1.008652

sp75\_906\_pp | .9973488 .0024242 -1.09 0.275 .9926088 1.002112

mine\_time | 1.001822 .001289 1.41 0.157 .9992988 1.004352

onsite\_insp\_hours | .9994807 .0001274 -4.07 0.000 .999231 .9997305

|

state |

AL | 1.045773 .1028063 0.46 0.649 .8624995 1.267991

AR | 1.707145 .0742139 12.30 0.000 1.567713 1.858978

CO | .7695927 .0948828 -2.12 0.034 .6043892 .979953

IL | 1.269782 .0719126 4.22 0.000 1.136376 1.418848

IN | 1.083778 .0986244 0.88 0.377 .9067349 1.295388

MD | 1.250682 .1875286 1.49 0.136 .932217 1.677943

MT | .5417063 .0218541 -15.20 0.000 .5005228 .5862785

NM | .7623263 .0289817 -7.14 0.000 .7075878 .8212992

OH | 1.045278 .0856985 0.54 0.589 .890112 1.227492

OK | 1.86593 .331889 3.51 0.000 1.316722 2.644215

PA | 1.306174 .0986557 3.54 0.000 1.126444 1.514581

TN | 1.714255 .1580958 5.84 0.000 1.430784 2.053888

UT | .5019236 .084067 -4.12 0.000 .3614682 .6969555

VA | .9374292 .0488642 -1.24 0.215 .8463869 1.038264

WV | 1.246411 .0553616 4.96 0.000 1.142493 1.359781

WY | .7927634 .0411079 -4.48 0.000 .7161524 .8775701

|

time |

2000 | .937628 .0668695 -0.90 0.367 .8153139 1.078292

2000.25 | 1.088656 .0776897 1.19 0.234 .9465559 1.252088

2000.5 | 1.208273 .0804809 2.84 0.005 1.060395 1.376772

2000.75 | .8415521 .0588529 -2.47 0.014 .7337587 .965181

2001 | .8381507 .054895 -2.70 0.007 .7371779 .9529539

2001.5 | 1.107038 .0665405 1.69 0.091 .98401 1.245448

2001.75 | .8849185 .0559612 -1.93 0.053 .7817616 1.001687

2002 | .9546038 .0753658 -0.59 0.556 .8177508 1.11436

2002.25 | .9243576 .0611177 -1.19 0.234 .8120062 1.052254

2002.5 | 1.005165 .0663908 0.08 0.938 .883112 1.144087

2002.75 | .8250573 .0602092 -2.64 0.008 .7151004 .9519216

2003 | .7798051 .0599565 -3.23 0.001 .6707182 .906634

2003.25 | .8357069 .0676241 -2.22 0.027 .7131421 .9793364

2003.5 | .9543248 .0696416 -0.64 0.522 .827142 1.101064

2003.75 | .6870895 .0492973 -5.23 0.000 .5969545 .7908341

2004 | .7295275 .056388 -4.08 0.000 .6269732 .8488566

2004.25 | .7778713 .0596819 -3.27 0.001 .6692674 .9040987

2004.5 | .8448257 .0611372 -2.33 0.020 .733109 .9735666

2004.75 | .6749958 .0463911 -5.72 0.000 .5899289 .7723291

2005 | .6679222 .0489255 -5.51 0.000 .5785955 .7710396

2005.25 | .7235741 .0536745 -4.36 0.000 .625664 .8368061

2005.5 | .7789885 .0568609 -3.42 0.001 .6751481 .8987999

2005.75 | .647381 .0516713 -5.45 0.000 .5536312 .757006

2006 | .7068737 .0574241 -4.27 0.000 .6028275 .8288781

2006.25 | .6740716 .0541369 -4.91 0.000 .5758948 .7889851

2006.5 | .7809948 .0627873 -3.07 0.002 .6671395 .9142807

2006.75 | .6305383 .0517351 -5.62 0.000 .5368725 .7405456

2007 | .6225055 .0511511 -5.77 0.000 .5299077 .7312841

2007.25 | .6393768 .055623 -5.14 0.000 .5391456 .7582418

2007.5 | .7530925 .0669339 -3.19 0.001 .6326952 .8964004

2007.75 | .6117252 .0529075 -5.68 0.000 .5163412 .7247296

2008 | .5839168 .0475135 -6.61 0.000 .4978386 .6848784

2008.25 | .5754494 .0497374 -6.39 0.000 .4857758 .6816766

2008.5 | .636341 .0566906 -5.07 0.000 .5343892 .7577433

2008.75 | .5127896 .0450245 -7.61 0.000 .431719 .6090841

2009 | .5228144 .0436401 -7.77 0.000 .4439116 .6157417

2009.25 | .5266553 .0474609 -7.12 0.000 .4413858 .6283977

2009.5 | .5821921 .0515461 -6.11 0.000 .4894436 .6925161

2009.75 | .4946347 .043483 -8.01 0.000 .4163475 .5876424

2010 | .5010342 .0461921 -7.50 0.000 .4182078 .6002644

2010.25 | .4957794 .0469896 -7.40 0.000 .4117297 .5969867

2010.5 | .6210744 .0527329 -5.61 0.000 .5258618 .7335263

2010.75 | .4945367 .044392 -7.84 0.000 .414754 .5896666

2011 | .4920675 .0430445 -8.11 0.000 .4145379 .584097

2011.25 | .4669452 .0403825 -8.81 0.000 .3941414 .553197

2011.5 | .5431405 .045269 -7.32 0.000 .4612827 .6395244

2011.75 | .4167985 .0359717 -10.14 0.000 .3519358 .4936157

2012 | .462742 .0410993 -8.68 0.000 .3888105 .5507315

2012.25 | .3977924 .0345738 -10.61 0.000 .3354865 .4716698

2012.5 | .4576512 .0434457 -8.23 0.000 .3799518 .5512399

2012.75 | .3584567 .0348516 -10.55 0.000 .2962627 .433707

2013 | .4103519 .0387105 -9.44 0.000 .3410817 .4936903

2013.25 | .388229 .0364175 -10.09 0.000 .3230291 .4665888

2013.5 | .4521485 .0433883 -8.27 0.000 .3746274 .5457109

2013.75 | .3460851 .0339954 -10.80 0.000 .2854768 .419561

2014 | .3867492 .0378376 -9.71 0.000 .3192656 .4684968

2014.25 | .4028332 .0406115 -9.02 0.000 .3306067 .4908388

2014.5 | .4222833 .0414772 -8.78 0.000 .3483355 .5119294

2014.75 | .4179393 .0413777 -8.81 0.000 .3442237 .507441

2015 | .3769038 .0376104 -9.78 0.000 .3099496 .4583212

2015.25 | .3552365 .0347313 -10.59 0.000 .2932892 .4302681

2015.5 | .4631514 .046588 -7.65 0.000 .3802781 .564085

2015.75 | .370936 .0403976 -9.11 0.000 .299638 .459199

2016 | .3959377 .0448714 -8.18 0.000 .317074 .4944166

|

\_cons | .0000915 5.75e-06 -147.90 0.000 .0000809 .0001035

ln(hours) | 1 (exposure)

------------------+----------------------------------------------------------------

/lnalpha | -1.036233 .0659371 -1.165467 -.9069982

------------------+----------------------------------------------------------------

alpha | .3547888 .0233937 .3117771 .4037344

-----------------------------------------------------------------------------------

(est1 stored)

. esttab using `"`directory'Model.`injury\_label'.`time\_label'.`violation\_level\_label'.C.PP.1.csv"', replace plain wide p eform

(note: file C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.SP.C.PP.1.csv not found)

(output written to C:\Users\jbodson\Dropbox (Stanford Law School)\R-code\Injury-Classification\PS Model Summaries 10-10\Estout\Model.PS.Q.SP.C.PP.1.csv)

. est store nbin

.

. pause "next"

.

. // test for over-dispersion

. lrtest pois nbin, stats force

Likelihood-ratio test LR chi2(0) = -6617.63

(Assumption: nbin nested in pois) Prob > chi2 = .

Akaike's information criterion and Bayesian information criterion

-----------------------------------------------------------------------------

Model | Obs ll(null) ll(model) df AIC BIC

-------------+---------------------------------------------------------------

nbin | 28,337 -47591.31 -45873.52 166 92079.05 93448.87

pois | 28,337 -53929.83 -49182.34 166 98696.68 100066.5

-----------------------------------------------------------------------------

Note: N=Obs used in calculating BIC; see [R] BIC note.

.

. pause "next"

.

. // final model + diagnostics/assessment

. quietly nbreg dv `pp\_vars' `covariates' ib(freq).state ib(freq).time, vce(cl mineid) exposure(hours) iter(50) irr

. predict cpp1\_yhat

(option n assumed; predicted number of events)

(1,952 missing values generated)

. gen cpp1\_res = dv - cpp1\_yhat

(1,952 missing values generated)

.

. summ dv cpp1\_yhat

Variable | Obs Mean Std. Dev. Min Max

-------------+---------------------------------------------------------

dv | 30,289 2.177721 3.851734 0 71

cpp1\_yhat | 28,337 2.421564 3.630078 8.37e-16 51.64643

. /\*

> pause "next"

>

> scatter dv cpp1\_yhat

>

> pause "next"

>

> scatter cpp1\_res dv

>

> pause "next"

>

> scatter cpp1\_res cpp1\_yhat

> \*/

. pause "complete: C.PP.1"